

VIA UPS

Mr. David Keith
Project Coordinator
Anchor QEA, LLC
614 Magnolia Avenue
Ocean Springs, MS 39654

RE: Draft Exposure Assessment Memorandum
San Jacinto River Waste Pits Superfund Site, Harris County, Texas
Unilateral Administrative Order, CERCLA Docket No. 06-03-10

Dear Mr. Keith:

The Environmental Protection Agency (EPA) and other agencies have performed reviews of the above referenced document dated January 2012. The enclosed comments shall be incorporated in the Final Exposure Assessment Memorandum and copies provided for review and approval in accordance with the approved schedule.

If you have any questions, please contact me at (214) 665-8318, or send an e-mail message to miller.garyg@epa.gov.

Sincerely yours,

Gary Miller
Remediation Project Manager

Enclosure

cc: Luda Voskov (TCEQ)
Bob Allen (Harris County)
Nicole Hausler (Port of Houston)
Jessica White (NOAA)

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Comments

Draft Exposure Assessment Memorandum dated January 2012

1. **(Section 2, p. 2-1):** This section discusses exposure scenarios and whether or not they are considered potentially complete. The Texas Risk Reduction Program (TRRP) rule does not distinguish between minor and significant pathways. If a pathway is considered to be complete, then it shall be evaluated quantitatively. For example, the exposure scenarios including fishers, recreational visitors and trespassers for the sediment to water pathway have been deemed complete/minor and therefore only qualitatively assessed. This pathway is important enough and visible enough to warrant quantitative evaluation. This is one of the pathways, regardless of how minor, that the public will have great interest in. This and any other complete pathways shall be addressed quantitatively.
2. **(Section 2, p. 2-1; and Figure 1):** Organisms except invertebrates have been deemed complete/minor for porewater. However, if birds disturb sediment, then they could be exposed to quite a bit of porewater. To illustrate this point, consider wading birds that forage by grabbing food items from the sediment. Quantitative assessment of porewater shall be included for appropriate bird models.
3. **(Section 3.1, p. 3-2):** The text states that only TEQ_{DF} , arsenic, and thallium exceeded screening values in all surface and subsurface samples from Phase 1 sampling for the south impoundment. However, several Phase 1 PCB analyses exceeded the PCB industrial screening level of 740 $\mu\text{g/kg}$. For example, SB001 had 1310 $\mu\text{g/kg}$ in one sample, and SB005 had 897 $\mu\text{g/kg}$ in another. The text shall be revised to include PCB as exceeding the screening values.
4. **(Section 3.1, p. 3-2):** This section identifies metals and inorganics as chemicals of potential concern for human health (also Table 1 of this document). However, this list is not completely reflective of the list identified in the Preliminary Site Characterization Report (July 2011 – Table 1-2). This section shall clarify the difference between the tables.
5. **(Section 3.2.2.3, p. 3-8):** This section discusses calculating a depth-weighted average soil concentration to represent the 0 – 12 inch interval. An explanation of how a depth-weighted average will be calculated shall be included.
6. **(Section 3.3, p. 3-8):** This section discusses how non-detect results will be handled. This discussion shall include a calculation of the toxicity equivalent quotients (TEQs) using the full value of the non-detect result as per TRRP §350.51(n) to use in comparing to the other two approaches, i.e., using one-half the detection limit as one approach and using zero as the other approach. In this document and in subsequent documents, the TEQs for dioxin-like PCB congeners and dioxin and furan congeners listed in Figure 350.76(d)(2)(B) of the TRRP rule shall be tabulated for comparison purposes.

7. **(Section 3.4, p. 3-11):** This section discusses the exposure units for the risk assessment. The exposure units shall include sediments and aquatic environment outside of the 1966 perimeter (out to the “blue” preliminary site boundary). Although data indicate mostly very low levels, the risk is still undetermined for this area.
8. **(Section 3.4 and Table 6):** The beach areas B/C and D shall be included as Post-TCRA sediment exposure units using the Trespasser scenario. A person climbing or otherwise going through the TCRA fence defines the perfect trespassing scenario. Also, the Post-TCRA soil exposure units shall be the same as for Pre-TCRA (with exception of the actual TCRA cap) for the Trespasser scenario.
9. **(Section 3.4 and Table 6):** The Big Star property soil samples shall be an exposure unit separate from the soil samples actually in/on the waste pits. These two areas are clearly very different, both from an exposure and risk standpoint. A single exposure point concentration for these combined will significantly underestimate risk of the pits.
10. **(Section 3.4 and Table 6):** An appropriate exposure unit for water shall be included.
11. **(Section 3.4.2, p. 3-12):** The short paragraph on Post-TCRA tissue modeling is unclear. It states that tissue concentrations will be calculated using the statistical relationship between sediment and tissue data within the tissue exposure unit. Clarify whether sediment or tissue data (or both) from within the tissue exposure unit be used. Clarification is also needed as to how these calculations will be performed, and why such is appropriate.
12. **(Section 3.4.2.1.1, p. 3-13):** This section shall include an explanation and justification as to why analyses were conducted to assess data similarities and whether or not to pool data sets.
13. **(Section 3.4.2.1.2, p. 3-14):** The calculation of site-specific Biota-Sediment Accumulation Factors (BSAFs) is important in order to be able to determine the acceptable sediment concentration to be protective of the human consumption of edible fish and shellfish. The calculation of BSAFs shall be included.
14. **(Section 3.5.1, p. 3-20):** There are distributions other than normal and log-normal. The report shall explain why no other distribution will be considered and why this is appropriate.
15. **(Section 4, p. 4-1, Footnote 9):** The following changes shall be made: change “evaluating” to “evaluated”, and change “level exposure” to “level of exposure”.
16. **(Section 4.1, p. 4-6):** This section discusses the selection of exposure frequency based on EPA's default factors and best professional judgment. This section shall clarify and state what exposure frequencies were chosen.
17. **(Section 4.1, p. 4-6):** This section discusses the selection of exposure duration based on EPA's default factors and best professional judgment. This section shall clarify and state what exposure durations were chosen.

18. **(Section 4.1, p. 4-8):** EPA 2004 and 2011 are discussed as references for adherence factors for soil and sediment, but it is unclear which reference(s) were utilized in the final decision. This shall be stated as is done in other sections. This is apparent however, in Tables 8, 9, 10 and 11.
19. **(Section 4.1, p. 4-8): Fractions of Total Pathway Exposure to Soil and to Sediment:** It is stated that “To estimate exposure, it is therefore necessary to describe the portion of the dermal exposure pathway that will be attributable to soil and sediment.” The text shall include that description. In addition, it was stated that “Information about the activities each receptor may engage in at the Site was used to assign these fractions.” The text shall also provide information about these activities and how they were used to assign the fractions.
20. **(Section 4.1, p. 4-9): Fraction of Total Daily Intake from Soil/Sediment That Is Site-Related:** It was stated that “Information about the Site was considered when determining the value for this factor for each receptor.” The text shall provide that information.
21. **(Section 4.1, p. 4-9): Fraction of Total Fish or Shellfish Intake That Is Site-Related:** It is stated that, “Information about the Site was considered when determining this factor.” The text shall provide that information.
22. **(Section 4.2.1.1, p. 4-11):** This paragraph states that “Information regarding fishing activities and consumption patterns at the Site is not available. In the absence of specific information on diet, exposures will be estimated separately under three scenarios: one scenario will consider finfish ingestion only, a second will consider crab ingestion only, and a third will consider clam ingestion only.” Given the lack of site-specific information on fishing activities, this is a reasonable approach. However, to help reduce the expected uncertainty, scenarios shall be included that examine the possibility of exposure which does combine two or three of the fish, crab or clam.
23. **(Table 7):** Figure 1 denotes a Trespasser scenario for the northern impoundment. Such scenario shall also be included in Table 7.